

IMPLEMENTATION OF A FIRST RESPONDER PROGRAM FOR THE NEENAH FIRE DEPARTMENT

STRATEGIC MANAGEMENT OF CHANGE

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ABSTRACT

Fire departments throughout the nation have been very active in Emergency Medical Services (EMS). The benefits to the community and the fire service are enormous in terms of public relations and rapid response times. The problem was that the Neenah Fire Department (NFD) had not been involved in EMS in any way for the past twenty years. Serving as a single function fire department in today's emergency services arena was not an effective use of human resources within the NFD. This problem was even more evident with the move of the private ambulance service out of Theda Clark Regional Trauma Center and into the neighboring community. Response times have always been a concern with the private ambulance service, and this move magnified those concerns. The purpose of this research project was to determine the need for the NFD to become involved in EMS through a First Responder Program (FRP). Once a determination was made, the goal was to implement the FRP if recommended. A review of present EMS in the City of Neenah was necessary. Historical, descriptive, evaluative, and action research methods were utilized to answer the following questions:

1. What is the role of a first responder?
2. Should the existing Emergency Medical Services (EMS) system in place in the City of Neenah be enhanced by a First Responder Program (FRP) within the Neenah Fire Department (NFD)?
3. Do other fire departments respond as first responders in their respective communities?
4. What are the training and financial issues involved with a FRP?
5. What are the expected benefits of a FRP within the NFD?

The procedures necessary to answer the research questions were guided by the work done in the Strategic Management of Change (SMOC) course through the National Fire Academy (NFA).

Realizing this would be a major change within the organization and for the citizens of Neenah, a committee appointed by Mayor Harwood was requested. The committee included representatives from the health care industry, fire, police, private ambulance service, union members, government officials, dispatchers, and the general public. Involvement of all affected parties was considered essential to the success of any program recommendation. The research was historical with a review of past EMS procedures in the City of Neenah, and a literature review of EMS in the fire service. Action research was used by applying the information and actually gaining approval to implement the FRP within the NFD. An evaluation of the current EMS system with response capabilities was also conducted. Time became critical as it was determined that a grant was available to assist with the purchase of the Automatic External Defibrillators (AED's). Limitations involving financial resources available to implement the committee recommendations entirely became an obstacle. Committee recommendations were then brought back to the council for approval, and the recommendations are currently being incorporated into the NFD.

The findings of the research indicated that the vast majority of fire departments serve as first responders in their jurisdiction. Only three cities in Winnebago County (City of Neenah, City of Menasha, and Town of Neenah), do not currently respond as first responders. However, the City of Menasha Fire Department recently gained approval to initiate a FRP, and the Town of Neenah is investigating the possibility of starting a similar program. The majority of fire departments in the State of Wisconsin are involved in EMS providing ambulance response and transport as part of their service.

The recommendation from this research is that the existing EMS in the City of Neenah should be enhanced by a FRP including AED's through both the NFD and the Neenah Police Department

(NPD). Implementation should be immediate within the NFD with a phase in approach for the NPD pending available funding. Education of the community in the use of 911 and cardiopulmonary resuscitation (CPR), and the importance of saving time in life threatening situations should be stressed. The placement of AED's in high density areas in the community should also be investigated. The EMS Committee appointed should remain intact to provide quality assurance of the program.

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INTRODUCTION

The NFD is very involved in the community with respect to fire prevention and suppression activities. The problem was that the NFD was not involved in EMS within the City of Neenah for over twenty years. With the private ambulance service electing to move out of the only hospital in the City of Neenah, it became apparent that there was now a gap in the delivery of EMS in the community. How to best fill that gap was a community wide concern that needed to be answered.

The purpose of this research project was to decide if the NFD should be involved in EMS through a FRP. If the ultimate decision made was to have the NFD serve as first responders in the community, implementing the change as quickly as possible was the goal. Historical, descriptive, evaluative, and action research methods were utilized to answer the following questions:

1. What is the role of a first responder?
2. Should the existing EMS system in place in the City of Neenah be enhanced by a FRP within the NFD?
3. Do other fire departments respond as first responders in their respective communities?
4. What are the training and financial issues involved with a FRP?
5. What are the expected benefits of a FRP within the NFD?

The research was historical and descriptive with a review of past procedures regarding EMS in our community, and a literature review of other municipal EMS services through fire departments. Action research was used by applying the information and actually gaining approval to implement the FRP within the NFD. An evaluation of the current EMS system with response capabilities was also conducted. Implementation of the program was the result of the research.

BACKGROUND AND SIGNIFICANCE

Currently, the City of Neenah is served by Gold Cross Ambulance (GCA) service. GCA is owned and supported by four area hospitals; Appleton Medical Center, St. Elizabeth's Hospital, Theda Clark Regional Medical Center, and Mercy Medical Center. GCA is the main player in a regional EMS system that covers 1100 sq. miles throughout Winnebago, Outagamie and Calumet counties, serving a population of 219,000 people. The City of Neenah has a population base of 24,000 people with 8.6 sq. miles, and is the home of numerous major paper manufacturing facilities. The population base soars at all times because of the shift work performed by employees in the manufacturing facilities. With this large service area and high population base, guaranteed response times are not possible for the citizens of Neenah. GCA covers their regional service area with a minimum of five ambulances, and have an average of seven ambulances available at all times. GCA serves the City of Neenah with one ambulance which is located at 990 S. Lake Street on the city's west side. Prior to April 1, 1998, GCA also served Neenah citizens from Theda Clark Regional Medical Center which is located in the City of Neenah on the east side. A decision was made by GCA management team to relocate their Theda Clark unit to the City of Menasha to better serve all communities in their region. GCA response times in the City of Neenah averaged over five (5) minutes prior to this move, and were expected to increase because of this relocation. A very specific concern was the coverage for the residents in the City of Neenah on the east side closest to Theda Clark.

The NPD assists GCA service at the scene of medical emergencies when they are available. The NPD employees initially received training as first responders some time ago, but have not taken the refresher course that is available. The NPD will respond available squads to life threatening calls, however, their current call volume of 13,000 plus calls for assistance a year does not guarantee first

responder capabilities. NPD employees are not certified in the use of the AED's, and would not be able to provide that need for some time because of training requirements. The NPD was unable to fill the gap in EMS because of their own call volume, and the time necessary to complete the required training.

The NFD is not currently part of the EMS system. Firefighters recently completed the 46 hour First Responder course and are certified. The training received was part of the program development towards being confined space rescue capable. The course also enables firefighters to help each other at the scene of an emergency, and affords additional medically trained personnel in the event of a catastrophic event or disaster in our community. With the First Responder course completed, it would only take an additional 6 hours of training to be certified in the use of the AED's. This was a critical point in getting the NFD involved in EMS.

The move to a neighboring community by GCA, coupled with the heavy workload of the NPD, created a gap in the delivery of EMS in our community. With the First Responder course work completed by NFD employees, and a call volume of 650 fire calls a year, it became clear to the committee appointed that the NFD could assist the citizens of Neenah and fill the gap in EMS. The Strategic Management of Change (SMOC) course at the NFA created a mindset that I should look "outside the box" and create opportunities for growth within the NFD. Filling the gap in EMS would prove to be a logical growth opportunity in the NFD. Firefighters would be responding more often in the community to emergency situations and would be more visible as a result. Educational opportunities and training activities would also increase due to first responder activities.

LITERATURE REVIEW

Publications concerning FRP in place in the fire service were plentiful. Issues such as response times, public relations, personnel and training issues, were all studied to some degree. The survey produced and mailed to 79 fire departments in the State of Wisconsin, contained important information and included numerous comments (Appendix A). The Learning Resource Center (LRC) at the National Fire Academy (NFA) had numerous Executive Fire Officer (EFO) research papers that were very appropriate for this topic. A search of articles was also conducted, and information obtained through various publications was used.

The purpose of a FRP including AED's is to fill the gap in the delivery of EMS in a community, and complete the "chain of survival" concept. No one seems to question the interdependency of early symptom recognition, early EMS system access, early CPR, early defibrillation, and early definitive care in achieving successful resuscitation. Few debate that it will take a concerted effort in the community to strengthen each of these critical links. (Hardy, 1989). The community consisting of members of the NFD and the citizens of Neenah put forth that concerted effort by being involved in the EMS Committee appointed by Mayor Harwood. The committee recognized the importance of the "chain of survival" by promoting the first responder concept including AED's within both the NFD and NPD.

Timothy J. Lallathin (1990) of the Winter Springs Fire Department in Florida researched the importance of first response in the fire service for the Executive Development course at the NFA. "First Response - a Continued Concept of Mutual Aid" was the title for his project. Although his research was not strictly for a medical first response study, it discusses the importance of the initial response of the nearest fire unit, with total cooperation of surrounding communities resulting in lives and property saved. This is significant in that by establishing a FRP within the NFD, we are responding the nearest

fire unit and we are working with the private ambulance provider to increase the likelihood of survival for the citizens of Neenah. Mr. Lallathin goes on to recommend that all fire departments consider first response rather than other costly alternatives such as service duplication. By developing a FRP in the City of Neenah, we would avoid duplication by not running an ambulance service, but compliment the existing service through a rapid response system. Norman Wichman of the Glendale Fire Department in Wisconsin researched EMS in the fire service for the Executive Development course at the NFA. “Impact of Ambulance Service within the Glendale Fire Department” was the title for his project. His research provides supporting evidence that a private provider should be utilized for transporting patients with the fire department used as first responders.

The research conducted revealed numerous articles on the use of AED’s by first responders. It was clear that any worthwhile FRP must incorporate AED’s into the response system. The EMS Committee recognized that fact and recommended AED use in both the NFD and NPD.

Involving the NPD in the response system was considered important to the success of the program. By placing defibrillators in the hands of the police, managers can expect almost to double the chances of survival, compared with perhaps the best rates in the country. When the Rochester, Minnesota, Police Department placed defibrillators in all of its police vehicles the results were nothing short of astounding. Of the 31 patients who were defibrillated, 18 survived to be discharged from the hospital (Matarese, 1997) . It seems clear that the likelihood of converting a patient in ventricular fibrillation (VF) to a normal sinus rhythm is clearly related to the duration of VF prior to countershock. Prompt treatment of VF offers the patient the greatest chance of ultimate survival (Rothenberg, 1988).

Dan Whisler of the Springfield MO Fire Department researched “The use of AED’s by Fire First Responders” for his research project for the Strategic Analysis of Community Risk Reduction

course at the NFA. His research showed that AED's can positively impact the mortality rate in a community. It also showed that many departments are using AED's and that several nationally recognized groups recommend their use by first responding fire units (Whisler, 1995).

Going beyond the public service use of AED's, an interesting article appeared in the August 1997 issue of *Occupational Health and Safety* titled "Defibrillators Enter the Business Marketplace." This article written by Richard A Lazar discusses the legal issues with the use of AED's in the business community. AED's have become so user friendly that local businesses should consider purchasing and training employees in their use. Despite technological progress, liability fears create impediments to the widespread deployment and use of these lifesaving machines within the commercial business environment. In other words, before AED's can become "as common as fire extinguishers," legal concerns must be acknowledged, understood, and addressed. One significant obstacle to large-scale AED distribution in the business world is fear of exposure to negligence liability lawsuits. Overall, the benefits of AED program adoption in the commercial business arena far outweigh any risks. As these benefits become better understood and disseminated within the business community, it is highly likely AED's will indeed become as common as fire extinguishers (Lazar, 1997). The EMS Committee discussed the expansion of an AED program to include the City of Neenah swimming pool, and other municipal facilities where attendance is significant. While a consensus was reached to attempt to place AED's in public areas, it was not legally or fiscally possible at this time.

Liability concerns also surfaced internally with many questions from firefighters concerning the issue. It was recommended that firefighters perform to the standard of care for which they are trained. This is a legal way of saying that if an individual abides by the training he/she received during the course offering, there is reasonable protection from liability. A review of Wisconsin case law to this date has

shown no litigation involving the direct patient/first responder relationship during the course of delivering pre-hospital care. This involves twenty eight years of practice within the State of Wisconsin. Concerns regarding the interaction with GCA and NFD employees have been addressed by Cities and Villages Mutual Insurance Company (CVMIC) and GCA. If firefighters are required to participate directly in the care of the victim by either riding along with or driving a GCA vehicle, they are insured by both parties, depending on the extent of the involvement and the role that they assume with GCA.

PROCEDURES

Prior to attending the Strategic Management of Change (SMOC) course at the National Fire Academy (NFA), I began to think about the required Executive Fire Officer (EFO) Applied Research Project (ARP). During my reflection, events took place in the City of Neenah with respect to GCA and their response capabilities. I recognized a need in the community to enhance the EMS available to our citizens as a result of a change in procedures by GCA. My desire to expand NFD services coupled with the obligations involved with the SMOC course, made it realistic to pursue a FRP for the NFD. I actually jumped into the EMS arena prior to attending the SMOC course because the timing was so critical.

The first issue that needed to be explored was how Mayor Harwood felt about the issue. Mayor Harwood had not yet been elected to office when GCA sent a memo to me concerning their move out of Neenah. Prior to Mayor Harwood's election victory, I had distributed a copy of the GCA memorandum to all City Council members for their information. Not one council member expressed concerns with the memorandum that was distributed. I elected at that time to take a wait and see attitude because outgoing Mayor Carpenter had not favored fire department involvement in EMS. It

was politically prudent to wait until after the election and then see how the new mayor felt about the issues involved. I knew at that point that it would take a strong backing of the new mayor elected to pursue the opportunity that presented itself.

In the meeting with newly elected Mayor Harwood in my office, I described the events that created the gap in EMS in the City of Neenah. I shared all memo's and letters previously distributed, and explained the grant that was available for the AED's for fire departments. The AED grant program was a key to the discussions with Mayor Harwood as a deadline of April 30, 1998 loomed for acceptance into the grant program. Mayor Harwood fully supported applying for the grants available and said "go for it." During our discussion, I suggested that he appoint an EMS Committee to study the issue. Mayor Harwood did this immediately and established June 30, 1998 as the goal for a report back to the full common council. The committee makeup was very important to the acceptance of a final recommendation, and it was agreed that I would make contacts and arrange a committee that would bear a strong makeup of all parties involved with a first responder program.

With the committee formally approved by the common council, meetings took place that reviewed programs in place in other communities. Evaluative research consisted of surveys of other fire departments in the State of Wisconsin (Appendix B) to assist us in determining the impact of a FRP in other departments. The results of the survey can be seen in Appendix C. The committee members agreed that sufficient information existed from surrounding communities programs for a thorough and competent review to take place within a short time span as requested by Mayor Harwood. It was clear from the results of the survey and the literature review that a FRP would benefit the City of Neenah.

The surveys conducted enabled the committee to produce strong evidence that FRP's are included in many public safety agencies throughout the State of Wisconsin. The survey was completed

by 73 of 79 Wisconsin fire departments (Appendix C). I also utilized information obtained in Emmitsburg at the LRC of the NFA. There were three research papers used from the many that were available, and several magazine articles. The textbook "*First Responder*" was utilized to provide technical support to the project. All reference material helped support the survey results received supporting FRP's in municipalities.

Assumptions and Limitations

One problem with the research was that departments surveyed included only full-time fire departments. Many rural communities have private ambulance services who may work with first responder groups in their respective communities. Rural areas are often served by citizens who respond to emergencies with their private vehicle and not on fire department apparatus. While this information would have been informative, it was assumed that the best information for the situation in Neenah was best provided by fire departments in urban areas serving a larger population base.

Another limitation was dealing with a short time frame for this project. While the project allows for six months to complete, the topic chosen by myself was very time limited. It was in the best interest of the Neenah Fire Department and the citizens of Neenah to proceed quickly in order to take advantage of grant programs for equipment purchases. It was also necessary to take action immediately when the private ambulance provider moved out of one of its facilities in the City of Neenah. Delayed response times could be avoided if the first responder concept was approved.

Another limitation was the financial resources available to proceed with a first responder program in the middle of a budget year. Any recommendation would have to be financially possible within the framework of the current operating budget.

It was assumed that the best makeup of a study committee would include all affected parties that would have to buy into a FRP concept. By including politicians, citizens, and all public safety entities in the decision process, the assumption was that there would be very little resistance to a change in services proposal. It was also assumed that the history of EMS in Neenah would play a major role in discussions by all parties. Breaking through the history barrier in the fire service can sometimes be next to impossible.

RESULTS

An enhanced EMS system in the City of Neenah through implementation a FRP in the NFD was the result of this research project. Response times for medical assistance were shortened, moral increased, public relations increased, and calls for assistance more than doubled the citizen contacts for the NFD.

Answers to research questions:

Research question #1: What is the role of a first responder? The First Responder is a member of the EMS system who has been trained to render first care for a patient and to help Emergency Medical Technicians (EMT's) at the emergency scene (*First Responder, 1996*). In the State of Wisconsin a first responder is an individual certified through 46 hours of training plus an additional 6 hours of training in the use of the Automatic External Defibrillators (AED's). First responder duties include:

- locating the incident
- securing the scene
- providing immediate emergency care including the ABC's (airway, breathing, circulation)

- defibrillation using the AED's
- controlling bleeding
- stabilizing fractures/C-spine, etc.
- protecting the patient from further injury
- obtaining appropriate history including medical history
- updating responding ambulance with condition of the patient
- providing support for relatives and bystanders
- assisting paramedics with patient care including assistance during transport
- retrieving needed equipment
- assisting with moving patient to ambulance

The First Responders serve a critical role in a tiered, professional emergency medical response system. Several components are necessary for an effective emergency response including:

- 911 Center - With knowledgeable telecommunicators to quickly ascertain appropriate needed assistance.
- Public Safety First Responders - With the training, equipment, and response guidelines to efficiently respond to reported medical emergencies, avoiding duplication of service, but keeping the time to definitive treatment at an absolute minimum.
- Paramedics - To assume treatment and transport patient to a health care facility.
- Medical Direction - Coordinated efforts through the physicians and hospitals to ensure quality service.

In addition to an effective emergency response system, early access to medical assistance via 9-1-1 and early life saving measures, including widespread CPR training, are needed.

Research question #2: Should the existing EMS System in place in the City of Neenah be enhanced by a FRP within the NFD?

Expected benefits for the citizens of Neenah and the NFD points toward an enhanced EMS system in the City of Neenah utilizing first responders. While this project would recommend a FRP, the ultimate decision rests with the Neenah City Council. The existing system in Neenah is an excellent system, and enhancing the system with a FRP will complement the existing service without duplicating the paramedic system in place. A FRP will create a cost-effective method of saving lives, and create a positive environment in the NFD increasing the moral of the department through productivity and effectiveness.

Research question #3: Do other fire departments respond as first responders in their respective communities? The First Responder method of operation is not a new concept and is in fact utilized by all agencies within Winnebago County except the City of Neenah, City of Menasha, and the Town of Neenah. The Menasha Fire Department has gained approval to begin the program, and the Town of Neenah is presently investigating the possibility. Other communities experience following AED's and FRP implementation is shown by comments received (Appendix A).

The survey results (Appendix C), indicate that 50% of departments serve as first responders for their respective communities. In departments that have an ambulance service, it was clear based on comments received that when an ambulance was tied up on another call, the engine company responded in its place and served as a first responder with the appropriate equipment. Comments shared in the survey from other departments also shows the benefits in cities that engage in a FRP.

Research question #4: What are the training and financial issues involved with a First

Responder Program? The First Responder course is 46 hours in length and costs \$80.20 per person. Books add an additional \$61.55 per person. The NFD completed the course work involved in February, while the NPD has 6 officers that need the entire course. Every two years the First Responder Refresher program would have to be completed by all members. The refresher program is

18 hours in length at a cost of \$31.65 per person, with no books to purchase. The NFD will not need the refresher training for two years, while 33 NPD employees are in need of the refresher program now.

The defibrillator training is 6 hours long at a cost of \$12.15 per person. The private ambulance provider will provide this training free of charge, and there are no books required. The recertification for the defibrillators is 3 hours long at a total cost of \$6.25 per person. This will also be provided free of charge by the private ambulance service.

The majority of training time will not involve overtime costs for fire or police department personnel, as training will be conducted on-duty. There may be times when employees are off-duty for vacation/sick leave etc., which would necessitate making up required classes. As a result, overtime would be necessary, but this would be very minimal. Any costs for training could be handled in the operating budget of the appropriate department.

Training will also be conducted concerning infectious disease issues and proper personal protective equipment (PPE) necessary for first responders. Proactive protection utilizing immunizations available to protect employees from disease is imperative. Records will be researched to make sure employees are current with available immunizations. Initial research indicates that all personnel are up-to-date on the Hepatitis vaccine, but this is a voluntary vaccination and some employees elected not to take part in the voluntary program.

Gold Cross will also support the First Responder Program in other ways including:

- Assistance in Grant Programs available for First Responders

(Current grants for AED's include two defibrillator units for the Neenah Fire Department. Full cost of AED's is \$2,800/ea. and the grant will cover \$2,000 per unit. Cost for the fire department equals

a total of \$1,600 for both AED's. There are currently no AED's ordered for the Neenah Police Department as training issues need to be resolved).

- Support through a liaison program that provides additional training.
- Physician medical direction to insure quality assurance.
- Ride-a-long programs to offer First Responders "on ambulance" experience.
- Assistance with safety measures and training that minimizes the exposure to disease from body fluids.

Research question #5: What are the expected benefits of a First Responder Program within the NFD? Statistics show that the citizens of Neenah will have a better chance of survival with an approved FRP. Equipping both police and fire units with AED's and up-to-date training will increase the likelihood of citizens walking out of the hospital following cardiac arrest.

Current hospital discharge survival rates range from 3-6% with a Gold Cross average response time of approximately 5.2 minutes plus an additional four (4) minutes for definitive treatment.

Studies have shown that **for every minute of delay** in administering defibrillation to a patient of cardiac arrest in ventricular fibrillation or ventricular tachycardia, **mortality increases by 10%. In other words, survival decreases by 10% for every minute defibrillation is not delivered.**

Average response times for the NPD equals approximately 2.5 minutes, while the average response time for the fire NFD is equal to approximately 3.5 minutes. Definitive treatment for the patient will be delivered sooner utilizing first responders, increasing their chance of survival.

Other benefits of a First Responder Program include:

- Saves lives and increases the capabilities of the Neenah Fire and Police agencies in dealing with life threatening situations.
- Creates a positive environment and increases moral within the two departments by being effective and productive.

- Builds a team concept among all public safety agencies, creating more interaction and communication between the services.
- Complements the existing EMS service in our community but does not duplicate the paramedic system in place.
- Brings a cost-effective proven method of saving lives to the citizens we serve.

DISCUSSION

The study results were very similar to the findings of others discussed in the literature review. The majority of fire departments are involved in EMS in some form, and response times are significantly lower in communities adopting a first responder program (Appendix A). The use of AED's has expanded dramatically to coincide with first responder programs, resulting in increased lives saved. In Rochester Minnesota for example, 58% of patients who were defibrillated survived to be discharged from the hospital (Matarese, 1997).

The cost of the FRP is minimal within the NFD. Firefighters had already completed the first responder course work in preparation for confined space rescue services. Equipment costs including the AED's and first responder kits would equal approximately \$2,000 when taking advantage of the \$4,000 in grant money available. The police department costs would be higher because of training issues and the inability to obtain grant money for the AED's.

While evaluating the study results, it seems that there are strong advantages for the NFD to be involved in EMS by entering into a FRP. Comments received through the survey (Appendix A), support the initial thought that public relations would be positive, and increasing the role of the fire service in the

community would more than double the calls for assistance received by the NFD (Appendix D). An increase in call volume was considered essential to the continued survival of the NFD in terms of staffing. Calls for assistance would more than double for the NFD, resulting in a stabilization in our workforce, and increased employee moral as firefighters would feel more appreciated and needed in emergency situations. The use of AED's within the FRP would have a positive impact in terms of lives saved.

As a result of the study, the implications for the NFD will be monumental. The study will have a positive impact on the NFD with respect to employee involvement in the decision making process. Employees were allowed input into the FRP implementation from beginning to end. Firefighters will appreciate the input and understand the importance of playing a role in EMS in our community. Training implications are significant with added responsibilities and required refresher and recertification classes needing to be scheduled. The challenge will be to be sure that other areas of service within the fire department such as prevention and inspection activities do not suffer. Calls for assistance will more than double causing increased interruptions in activities presently performed. City of Neenah statistics collected for ambulance responses from 06/01/97 - 05/31/98 (Appendix D) indicate that there were 904 total responses during that time frame. This was further broken down into specific categories so a reasonable estimate could be made concerning the number of first responder calls that can be anticipated over the course of one year. With these figures it can be anticipated that City of Neenah first responders will be responding on approximately eighty percent of the total ambulance calls in the City of Neenah, which equals approximately two calls for service per day.

While it could be argued that the change to providing first responder service will cause too many distractions and interruptions in the usual routine, it must be remembered that the fire service is in the

business of saving lives and protecting property. Many more lives can be saved by becoming an integral part in EMS and filling the gap in our EMS in the City of Neenah.

While researching this topic, and taking part in the EMS Committee discussions, there were major concerns with multiple agencies responding to the same medical emergency with red lights and siren.

This concern was addressed in several different ways including:

1. The first concern is for the patient. Many life threatening situations, including pulseless-non-breathers (PNB's), require two first responders as well as the paramedics. In this instance, one fire engine with three first responders may negate the need to send a Neenah police officer. **This should not prevent an available police unit to respond with an AED**, based on the theory that early arrival may make the difference for the patient. It is very possible that a police unit could be very near the scene of a PNB, and should respond to give the patient every opportunity for survival.
2. The NFD, NPD, and Gold Cross personnel are trained in emergency vehicle response which helps reduce the fears involved with multiple vehicle response. Safety is a major concern for personnel and bystanders and is stressed in the training. All agencies have excellent safety records with respect to vehicular accidents.
3. Priority dispatching would minimize this safety concern as well. Telecommunicators would dispatch necessary units to the scene of a medical emergency. Calls considered to be life threatening, including PNB's, would require the two closest first responders to be dispatched using red lights and siren. After assessing the scene, the first unit arriving on scene would immediately downgrade or cancel the second responding unit as the scene dictates. Known factors affecting availability of units should be considered such as special events, high service demands, and large fires affecting fire unit availability.

While evaluating the study results, it seems that there are strong advantages with responding the nearest engine company as an emergency response vehicle. Most municipalities surveyed equip their vehicles to respond for medical emergencies as needed. At times they do not respond when the ambulance is out of service. This is because the engine is housed in the same building as the ambulance, and an engine company response would not lower response times. All comments received suggested that a FRP is beneficial for all parties including citizens and fire department personnel.

The research completed revealed an article written by A.J. Heightman in the May issue of *JEMS Magazine* titled “What if it Was Your Mother?” I feel this article does a good job of summarizing the need for a FRP not only in Neenah, but in all communities. Mr. Heightman states that slow response times and old-fashioned system designs are allowing patients to die unnecessarily. All systems must be periodically redesigned to advance with current thinking, experience and research. EMS services must eliminate ego-driven design processes and take a long, hard look at redesigning their response system to maximize service and results. The fact that flight attendants now defibrillate patients with positive results while flying over EMS systems that do not allow their BLS personnel to use AED’s. And many EMS services still will not endorse or support their police officers or firefighters responding to their calls, let alone carrying and utilizing AED’s. If your mother, grandfather, son, or best friend were to collapse in cardiac arrest, I’ll bet you’d pay almost anything to have them resuscitated. You’d be glad that a district fire station had a unit en route and on scene within two minutes of dispatch. And I’ll bet you’d find the money to place an AED in the trunk of the police cruiser assigned to your mom’s neighborhood if they would arrive at her side and save her in less than three minutes when she needed it (Heightman, 1998).

RECOMMENDATIONS

The NFD should implement a FRP including AED's as soon as possible. The NPD should also be involved in a program which would include AED's. The total cost of the program, including training, TB skin titers, AED's, and first responder kits, would be approximately \$26,679. The NFD is able to implement the program immediately by conducting the necessary six hours of training in the use of the AED's.

Neenah police officers (33 total) should complete the 18 hour refresher course, while 6 NPD officers should complete the 46 hour FRP. All NPD officers should be trained in the use of the AED's as soon as possible, with a total cost for all the training of \$1,605.80. Neenah police officers should continue to respond to appropriate medical calls to assist as needed during the implementation period.

A FRP should include an educational program for our citizens covering areas such as the use of 911, CPR, and the importance of saving time in life threatening situations. A continued pursuit and investigation concerning the possibility of placing AED's in the community especially high density areas such as the Neenah Pool should also be part of the ongoing efforts to minimize loss of life in our community.

A program of quality assurance shall be implemented to address concerns of patient care and program viability. The EMS Committee appointed by Mayor Harwood should remain intact in order to review the FRP after implementation and periodically thereafter. The plan may be modified through evaluation as appropriate.

REFERENCE LIST

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APPENDIX A

FIRST RESPONDER SURVEY COMMENTS

The survey requested comments relative to EMS in their community.

We provide EMS (ACLS) to entire county. Most county areas provide 1st responders which arrive on-scene within 3-5 minutes. Ambulance arrives in 10 to 18 minutes.

First due district: Ambulance and PD with auto defib.

First due ambulance out: Get first due engine with semi auto defib and PD with auto defib until second ambulance arrives.

We use auto defib on all rigs.

Sometimes it is frustrating to get citizens and council to understand why we send the “big” engines to an EMS scene, but once they understand they too realize the benefits to each citizen.

First response care is only given when both EMS units are busy and mutual aid ambulance is dispatched.

The Police Department supplies first response and we receive ALS from Franklin or Greenfield.

Current paramedic service provided by Lakeview Medical Center. Perception exists on the part of LMC personnel that RLFD is an “enemy.” The Rice Lake Common Council, at this time, is not endorsing Fire Department based EMS.

We use engine response to provide additional help to our 2 person ambulance crews. They respond to unresponsive, pulseless and breathless patients. They are also sent for childbirth and seizure patients.

We have a above average % on PNB. A lot of the reason is our engine and ladder company get there first and do airway and defib. Prior to our rescue.

Four ambulances - 1 in each of 4 stations. We respond immediately with a staffed, 2 person mini-van. Ambulances respond as POC members arrive. In most cases, van arrives first.

Our contract area for EMS has first responders and are a “tremendous” asset to their community both with reduced response times and manpower.

APPENDIX A-1

There are many areas I would like to progress in EMS for our community. However, I am locked in a county that is more concerned over political items.

Two stations covering 28 square miles - 3rd station is in budget for northern side of city. City will be trying to get a paramedic unit in 1999. Currently 4 ambulances serve the city. Flight is 10-20 minutes out.

City administrator stated in meeting that its better for fire department to run ambulance service than to have private service.

All our engines are staffed with EMT D/A's at a minimum and respond depending on type of call, on a first due EMS unit.

We staff all outlying companies with a minimum of one EMT-P. We provide a paramedic engine company at all outlying companies. The priority for staffing is that each engine company have at least one paramedic if possible.

I believe our save rate is enhanced by the first responding engines. We use the Claussen priority dispatch system with pre arrival instructions. Engine companies do not respond to less than life threatening medical emergencies.

We supply EMS service with two ambulances. If both are in service, we respond a service company to provide EMS and call mutual aid for transport.

37 engines, 17 ladder companies, and 2 rescue squads provide BLS at the EMT-D/A level. There are 8 ALS transport units staffed with a minimum of 2 EMT-P. (5) privately owned ambulance companies provide BLS transport.

We have 3 defined response areas. There are 3 BLS ambulances, 1 ALS unit, and 1 BLS engine providing first response coverage. Our department had 4,275 responses in 1997, approximately 75% of which were EMS related.

EMS runs account for 61.4% of total run volume in 1997 and 65% of total run volume in 1998.

The Chenequa Fire Department started a First Responder/EMS program approximately a year and one-half ago and has found it to be highly successful. The reason we started the program was that in our Village one of the goals set out for me by the Board was to improve the emergency medical service in the community. At times we found that there was somewhat of a delay in the time it took for the other ambulances to respond being that they are primarily all volunteer departments. Daytime staff along with all police officers also be trained in EMS

APPENDIX A-2

supplements our fire department. In reviewing the EMS program and what services we would provide to the Village, it was also suggested and implemented through community donations that we include the automatic defibrillator program. Thus we have trained all fire department personnel as either First Responder Ds or EMTs. At the same time, all police officers were certified as First Responder Ds and additionally carry an automatic defibrillator in their squad cars.

4-6 minute response time for both BLS and ALS within city limits.

Department has 3 AED in hands of direct responders that usually arrive on-scene before ambulance (this is evenings after full-time personnel are off-duty).

Response times lowered. Defibrillator saves increased better than 20% rate.

Stable work force vs private. Increased continuity of service.

3 ALS ambulances with Lifepak II manual defib.

2 engines and 1 rescue with BLS equipment and automatic defib (Heartstart 2000).

I am a firm believer that each and every fire department should provide at least 1st responder.

76% of our alarms are EMS, 70% are 911 calls, 6% hospital transfers.

Fire stations are strategically located to handle EMS.

We operate 2 BLS ambulances, 3 BLS engines and 1 ALS ambulance. We are working toward an all ALS system. We send a BLS engine and the appropriate ambulance to all EMS calls. 1,631 EMS calls in 1997.

Fire department provides all emergency EMS for town. We have 4 ambulances (1 paramedic - 1 intermediate - 2 BLS). Non emergency EMS transports are done private ambulance company. Engine companies are used (BLS with defib - EPI and Combi-Tube Cert). As first response if closer than 1st available ambulances engine company also used for extrication of MVAs.

We will be staffing an intermediate ambulance along with a paramedic ambulance January 1, 1999. The intermediate ambulance will provide transport for the less critical incidents, keeping the paramedic ambulance available for critical patients.

We are just beginning a first responder type program. We have 14 first responders and 8 EMT D/As. We respond to car accidents with EMS. We have confined space equipment and training. Are in process of gaining Defib.

EMS is our primary business. Our revenues are critical to city government.

APPENDIX A-3

First responders have been provided by our department since 1978. Initially, they were provided at the EMT Basic level. Currently, they are provided at the EMT D/A, E level. This service has always been provided at \$ 0 charge.

Our EMTs run as first responders to the scene for day calls and anytime if the call is within one mile of their home. That way we can have a “first responder” on scene in less than a minute if it’s next door to them.

We run two BLS ambulances and one ALS unit staffed with three people every 24 hour shift. All ALS/BLS units are assigned to fire responses and act as a fire company. We cross staff two reserve BLS units with members from a ladder or engine company (that unit is then taken out of service).

We currently cover 48 square miles out of two stations. We will better our response times with the addition of a third station in April/June.

Ambulance fund in effect since 1983. This is an on-going account with funds collected for service. This pays for apparatus-equipment-training-secretary for billing an all other ambulance related costs. Totally believe ambulance service should be run by the fire service.

We are the 1st First Responder Defib unit in this county. We are jointly dispatched with Madison Fire Department paramedics who transport.

Joint EMS district. We only run a engine for second EMS calls.

We are a POC department - Chief full-time. We have first responders with our POC directly to the scene (designated people). Response time shortened many times by 2 minutes. Provide valuable information to incoming units.

Paramedic ambulance provided by county as a 3rd service covers whole county. We provide 1st responder service only in the city and when requested by ambulance to other areas.

Our First Responder program is used mainly when our units are unavailable (at hospital, or a previous call, etc.) and we have a mutual aid unit responding from a different municipality.

Our EMS system is a terrible model because it is county controlled without the local provider able to select the level of service.

The GFD operates 2 ambulances out of one station, these are BLS units staffed by 3 personnel. We contract with 2 neighbors for ALS units. We average around 1,000 EMS runs per year. GFD has 19 full-time and 16 paid-on-call personnel.

APPENDIX A-4

We will staff VOC's in quarters 7 days a week - 24 hours for EMS calls next year.

This supplements manpower at more service calls also. I believe that engine company response to PNB auto accidents, CO calls and other service calls is a must for safety of the patient.

We have a private ambulance service based in the City of Waupun and covers all of our fire protection area.

We have been EMT-I certified for three years. We are now involved in an Enhanced EMT-I pilot program.

We use engine company assets for MVAs and heart attacks or complicated rescues.

City of Mequon ambulance is separate from fire department.

APPENDIX B

November 4, 1998

Roger Melchior, Fire Chief
Allouez Fire Department
135 Dauphin Street
Green Bay, WI 54301

Dear Chief Melchior:

The City of Neenah Fire Department (NFD) is proposing a first responder program to enhance the current Emergency Medical Service (EMS) provided by a private ambulance firm. As part of a research project for the *Strategic Management of Change (SMOC)* course at the National Fire Academy (NFA), please see the attached "First Responder Survey."

I am asking that you complete and return this survey to me by December 1, 1998. I have enclosed an addressed/stamped envelope for your convenience. I will combine this information with other fire departments in the State of Wisconsin. This information will be used to complete the research and assist the NFD with developing changes to the current EMS program within the City of Neenah.

Thank you for your time and consideration. If you would like a copy of the completed survey results, please complete the appropriate information on the survey form.

Sincerely,

Len Vander Wyst, Fire Chief
City of Neenah Fire Department

Attachment

APPENDIX B-1

CITY OF NEENAH FIRE DEPARTMENT FIRST RESPONDER SURVEY

1. Name of fire department:_____

2. Fully Paid ____ Fully Volunteer ____ Combination ____

3. Does your department provide an ambulance service for your community? Yes_ No__

4. What level of ambulance service do you provide? (Check all that apply)

EMT Basic_	EMT-P	
EMT D/A	Other	
EMT I/E		

5. Does your department provide a First Responder Service for your community using an Engine Company for response? Yes ____ No ____

6. If you provide a First Responder service, have you seen any benefit to the community with respect to shorter response times. Yes ____ No ____

7. What is your average response time for EMS including your First Responder Engine Company?

8. Please add any comments relative to EMS in your community.

10. Please forward a copy of survey results to (complete only if you would like a copy of results):
 Name: _____
 Address: _____

APPENDIX C

STATE OF WISCONSIN FIRE DEPARTMENTS 79 Mailed Out 73 Responded			
	Yes	No	No Reply or N/A
Does your department provide an ambulance service for your community?	56	16	1
Does your department provide a First Responder Service for your community using an Engine Company for response?	36	36	1
If you provide a First Responder service, have you seen any benefit to the community with respect to shorter response times.	34	6	33
Level of ambulance service provided. NOTE: Some have more than 1 service	EMT Basic 14 EMT D/A 36 EMT I/E 22 EMT-P 30 Other 6 No Answer 13		
Average response time for EMS including your First Responder Engine Company.	Fully Paid	Fully Volunteer	Combination
	3.7 Minutes	5.5 Minutes	5.34 Minutes

APPENDIX D

Gold Cross Ambulance Service, Inc.
 Neenah First Responder Report
Medical vs. Trauma Response
 Data Collected: 06/01/97 - 05/31/98

Trauma	319
Medical	549
Cancel	36
Total	904

<i>Medical Response</i>	
AOD/DOD	36
Anaphylaxis	4
Syncope	23
Suicide	3
Seizure	63
Resp. Difficulty	99
Flank Pain	1
Psychological	9
Choking	2
PNB	29
OB/GYN	4
Neurological	2
Nausea/Vomiting	2
Infection	2
GI Problems	28
Flu-like Symptoms	5
Dizzy/Weak	37
Diabetic	34
CVA/TIA	35
Cardiac	97
Cancer	3
72 hr. Hold	2
Diaphoresis	1
Unconscious	3
Other	10
Sub-Total	537
Standby Fire	7
Release Signed	3
Canceled	2
Total	549

<i>Trauma Response</i>	
10-50	102
Assault	21
Gunshot	127
Ortho	2
Bleeding	25
Trauma Blue	16
Burn	4
Mech/Ind	15
Sports	4
Other	1
Total	319